CLAIMS

1. A method of optical communication using a multimode fibre, the method comprising:

using one or more optical radiation transmitters, coupling optical radiation into the multimode fibre using a launch which restricts the number of modes excited in the fibre such that background noise is suppressed in the demodulated signals, wherein the, or each, optical radiation transmitter is a single- or multi- transverse mode laser transmitter driven by a combination of modulated radio frequency signals and/or baseband signals.

2. A method according to Claim 1, where the coupling step comprises a launch which is co-linear but at an offset to the fibre axis.

3. A method according to Claim 1 or 2, wherein the or each optical radiation transmitter has a linear frequency response whereby it is responsive to both base band and RF inputs.

4. An optical communication system comprising:

one or more optical radiation transmitters;

a means of coupling optical radiation from the, or each, optical radiation transmitter into a multimode fibre using a launch which restricts the number of modes excited in the fibre such that background noise is suppressed in the demodulated signals; and

a photodetector; wherein the, or each, optical radiation transmitter is a single- or multi- transverse mode transmitter arranged to couple transmission signals into the multimode fibre which signals are combinations of modulated radio frequency signals and/or baseband signals.

5. An optical communication system according to Claim 4, where the means of coupling light into the fibre produces a launch which is co-linear but at an offset to the fibre axis.

6. An optical communication system according to Claim 5, wherein the multimode fibre has a core diameter of 62.5μm and where the offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter is from approximately 10 μm to approximately 25 μm.

7. An optical communication system according to Claim 4, 5 or 6, wherein the or each optical radiation transmitter has a linear frequency response whereby it is responsive to both base band and RF inputs.

8. A device for coupling combinations of modulated radio frequency signals and/or baseband signals into a multimode fibre using a launch which restricts the number of modes excited in the fibre such that background noise is suppressed in the demodulated signals, the device comprising at least one optical radiation transmitter having a single- or multi- transverse mode and drive circuitry having a first input port for modulated radio frequency signals and a second input port for baseband signals, the drive circuitry being arranged to receive electrical modulated radio frequency signals and/or baseband signals and to drive the laser transmitter therewith .

9. A device according to Claim 8, having an optical connector for coupling light into said fibre to produce a launch which is co-linear but at an offset to the fibre axis.

10. A device according to Claim 9, for a multimode fibre having a core diameter of 62.5μm, wherein the connector is arranged to provide an offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter between approximately 10 μm and approximately 25 μm.

11. A device according to claim 8, 9, or 10, wherein the at least one laser transmitter has a linear frequency response whereby it is responsive to both base band and rf inputs.

12. An optical communication system where an alternative launch technique is used to restrict the excited fibre modes to ensure high quality multi-service transmission.

13. An optical communication system as described in claims 4-12 which employs multimode fibre splitters to split the optical signal on a single multimode fibre to multiple multimode fibres for onward transmission.

14. An optical communication system as described in claims 4-12 which employs multimode fibre combiners to combine the optical signals on multiple multimode fibres onto a single or multiple multimode fibres for onward transmission.